Energy Policy Update

Energy and Environmental News

July 8, 2013

This newsletter is published by the Arizona Governor's Office of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international and domestic energy and environment-related publications reviewed by the Education and Community Outreach personnel. For inquiries, call (602) 771-1143 or toll free (800) 352-5499. Compiled and edited by Gloria Castro, Special Projects Coordinator. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

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For your convenience, Arizona-related titles are highlighted in blue.

ARIZONA

Council Postpones Final Vote On Energy Codes

[Arizona Daily Sun, July 4] The Flagstaff City Council took a step back Tuesday night from requiring new, stricter energy-efficiency construction for new homes. The group decided instead to come back to the issue on July 16 for a possible decision. The council is looking at three options: Leaving building requirements for new homes the same as they were in 2006; changing them to 2009 international recommendations (the middle-of-the-road option); or bringing them to 2012 international standards (the most demanding option).

Farmers Angry over Ariz. DWR's Plan To Reduce Water Rights

Pumping must be reduced for future use

[Eloy Enterprise, July 27] CASA GRANDE — Many area farmers are unhappy with an Arizona Department of Water Resources plan to gradually reduce groundwater rights for future development of their land. On June 19, nearly 150 people packed the council chambers at Casa Grande City Hall, some of them to voice their opinion about the plan, which many say will strip the value from area farmland. Dick Powell, a City Council member and local businessman, said the ruling could have a negative impact on the area economy by potentially taking thousands of acres of agricultural land out of production. "For every square mile of farmland, an average of $500,000 is spent in the local economy," Powell said. Under the rule approved several years ago with little awareness, "water credits" begin to decline in 2014, when the allocation factor drops to 94 percent of the original amount. In 2015, the number drops to 88 percent. Ten years from now, in 2023, the credit will be reduced to 64 percent. By 2054, it will be at zero. With each incremental reduction, the value of the farmland declines, Powell said. He believes the plan will convince farmers to quickly sell or convert their lands to non-agricultural use rather than risk losing the property value. That could leave acres of dry, bare acreage across the county.

Forest Service Proposes that Rosemont Mine be OK'd

[Arizona Daily Star, July 1] The proposed Rosemont Mine meets all federal environmental laws, poses no jeopardy to endangered species and should be approved, the U.S. Forest Service said Monday. But that's not a final conclusion because reports on endangered species issues, tribal cultural resources such as archaeological sites, and U.S. Clean Water Act compliance remain unfinished, cautioned a top service official, Jim Upchurch. In its long-awaited final draft of a crucial environmental impact statement, the Forest Service also continued to say it can't legally stop the mine if it meets all environmental laws. Coronado National Forest proposes to approve Rosemont Copper's plan of operations for construction and operation "with concurrent reclamation" of its open-pit copper, molybdenum and silver mine in the Santa Rita Mountains southeast of Tucson, the new report says. The mine would operate for 24 to 30 years, the report says. This is the first time, after years of study, that the service has said the mine will meet federal air-quality standards.

ALTERNATIVE ENERGY AND EFFICIENCY

Mexico's CFE To Issue Eight More Generation Calls in 2013

[Power Engineering, July 1] Mexico's national utility CFE plans to issue eight more power generation tenders in 2013, CEO Francisco Rojas said in a press release. The eight projects look to add 3.15GW capacity to the national grid and are expected to cost a combined US$4.46bn, the executive added. CFE was unable to provide details on the eight tenders but according to CFE's power sector works and investment plan (POISE) from 2012, the tenders will be a combination of thermo, wind, hydro and geothermal projects. According to the POISE, upcoming tenders include the 100MW Rumorosa III wind farm in Baja California state; 660MW Centro II combined cycle in Morelos; 1,034MW Noreste (Escobedo) combined cycle in Nuevo León; 80MW Todos Santos combined cycle in Baja California Sur; and 49MW Todos Santos II turbogas thermo in Baja California Sur. As well as the 700MW Topolobampo II in Sinaloa; 304MW Sureste IV wind farm in Oaxaca; 100MW Mexicali geothermal in Baja California; and the 225MW Chicoasén hydro in Chiapas.

Microsoft: Market Analytics Could Cut Data Center Emissions 99%

[Energy Manager Today, July 1] Data center owners could reduce emissions by as much as 99 percent by using electricity market analytics to plan their highest energy consuming computation to coincide with times when the grid is being powered by renewable energy sources, according to results of early-stage research by Microsoft. Microsoft's data center research was presented earlier this year to the IEEE Green Technologies Conference 2013 in Denver. The Dublin, Ireland-based Microsoft researchers outlined algorithms to price data center resources based on electricity market conditions in order to reduce costs, reduce resulting emissions and to increase the share of renewable energy. The algorithms rate different criteria on the electric grid, like prices, carbon emissions and the rate at which renewable energy is being integrated to power the grid. The analysis helps predict when electricity prices are lowest and when the highest point of renewable energy generation may occur. Data center owners could use the analysis to delay moveable computation to times when the grid is being powered by renewable energy. They could also use the analysis to move computation to areas of the grid where renewable energy sources are beings deployed, which will help reduce the overall carbon footprint associated with cloud computing, Microsoft says.

Sioux Tribes Plan Large-Scale Wind Energy Project

[Associated Press, July 2] Sioux Falls, S.D. – A group of Sioux tribes in South Dakota are hoping to pump some much-needed revenue into their economies with an ambitious wind project, but some wind industry experts question whether the tribes understand the hurdles they face with such a large-scale development. Leaders from six Sioux tribes announced plans at last month's Clinton Global Initiative to develop a renewable energy project that would generate 1 to 2 gigawatts of power annually. Funding for the up to $3 billion project would come from the sale of bonds by a new multi-tribal power authority as well as donations to a website. "It gives Native tribes who aren't in populace areas and don't have casino revenue a chance to earn some real money that can then be used to reinvest into the community to diversify the economic base that exists," Clinton said at the event. The Sioux tribes are located in some of the poorest areas in the country. But wind energy experts said the tribes face many obstacles in making the project a reality. "When I see plans for a thousand megawatts, I have to give a chuckle," said Steve Wegman, an analyst for the South Dakota Renewable Energy Association, who noted that the project is similar to one proposed years ago. "The goal is good, but it's going to take them a long time to get there." One of the biggest obstacles to the project is simply what to do with so much energy in a state that doesn't demand a lot. Wind energy demand in South Dakota sits at less than 800 megawatts currently. Wegman said. Another 100 will be put on line in the next year.

SolarCity's LightMount Reduces Distributed Weight of PV Panels

[Energy Manager, July 3] Clean energy provider SolarCity has introduced a lightweight roof mounting product that the company says will maximize solar installation capacity on commercial building rooftops by reducing the distributed weight of conventional solar photovoltaic panels. Commercial building rooftops have strict codes specifying weight constraints to comply with safety codes, the company points out. On average, the distributed weight of conventional solar photovoltaic (PV) panels is about 3-4 pounds per square foot (lbs/sq.ft.) With LightMount, the distributed weight of PV panels is reduced to 2.3 lbs/sq.ft., which maximizes the space for solar. SolarCity says the product is also useful because commercial customers who lease their real estate space are sometimes not allowed to make building changes that would penetrate the roof or the walls, and LightMount is a non-penetrating racking product that is bonded to the rooftop creating a monolithic foundation for the solar PV system.

ENERGY/GENERAL

EIA: US Reactor Retirements To Cut Summer Nuclear Capacity by 3%

[Power Engineering, July 2] Since October 2012, Electric Power companies have announced the retirement of four nuclear reactors at three power plants. The four reactors have a combined capacity of nearly 3,600 megawatts (MW). The recent retirements are the first since 1998. Decisions to retire the units involved concerns over maintenance and repair costs and declining profitability. The recent reactor retirements will decrease the total number of operating nuclear reactors to 100 and will reduce total U.S nuclear net summer capacity by three percent.

Study: Consumer Trust in Electric Utilities Sinks

[Electric Light & Power, July 2] About a quarter of electric consumers trust their power utilities, according to an Accenture study of more than 11,000 customers in 21 countries. Accenture's research shows that just 24 percent of consumers trust their utility to inform them of actions they can take to optimize energy consumption — a decrease of nine percentage points from 2012. This is the lowest level of trust since the multi-year global research program was launched four years ago. Furthermore, customer satisfaction has drifted lower globally, falling from 59 percent to 47 percent over the past year. Across both regulated and competitive energy markets, consumers are ready to turn to alternative providers for energy and energy-related products and services. If given the choice, 73 percent of the consumers surveyed said they would consider alternative providers for purchasing electricity and alternative energy-related products and services.

Water Warming to Boost Hydro, Nuclear-Power Costs:

[Bloomberg, July 8] Waterways warmed by climate change will increase electricity prices by as much as a third in southern Europe as producers struggle to cool power stations, a study showed. Countries from Romania to Bulgaria and Slovenia face the biggest price increases, according to research today from the Laxenburg, Austria-based Institute for International Applied Systems Analysis. Dutch, German and Spanish scientists participated in the study. "The combination of increased water temperatures and reduced summer river flow under climate change is likely to affect both hydropower and thermoelectric power generating capacity in Europe," wrote the authors, led by Michelle van Vliet, whose research focuses on how warming climate will affect world river flows. Freshwater is becoming more scarce as the globe copes with climate change that shrinks glaciers, aquifers get depleted and some regions become dryer as the world population rises to 9 billion by 2050. In addition to providing hydropower, water is an essential cooling function inside nuclear and coal-fired plants. The European report follows calls on U.S. energy providers to boost climate-change adaptation. "All kinds of energy infrastructure and all kinds of critical infrastructure has to be planned with an understanding that we are likely to have to adapt to some of the effects of climate change," Department of Energy Secretary Ernest Moniz said last week in Vienna. Plants may have to swap cooling technologies "that's more expensive and makes the plant less efficient," he said.

INDUSTRIES AND TECHNOLOGIES

Solar Powered Plane Finishes Journey, Lands in NYC

[Associated Press, July 6] A solar-powered aircraft completed the final leg of a history-making cross-country flight Saturday night, gliding to a smooth stop at New York's John F. Kennedy International Airport. The Solar Impulse touched down at JFK at 11:09 p.m., completing the final leg of the cross-continental journey that started in California in early May. For Saturday's final leg, the aircraft left Dulles International Airport a little before 5 a.m. The flight plan for the revolutionary plane, powered by some 11,000 solar cells on its oversized wings, had called for it to pass the Statue of Liberty before landing early Sunday at New York. But an unexpected tear discovered on the left wing of the aircraft Saturday afternoon forced officials to scuttle the fly-by and proceed directly to JFK for a landing three hours

earlier than scheduled. Pilot Andre Borschberg trumpeted the milestone of a plane capable of flying during the day and night, powered by solar energy, crossing the U.S. without the use of fuel.

When Fuel Economy Improves, but Filling the Tank Costs More

[New York Times, June 28] The math seems so straightforward: as engines get smaller and fuel economy improves, the cost of driving will fall, right? Not necessarily. In a growing number of new vehicles, the methods used to squeeze equivalent horsepower from engines with smaller — or fewer — cylinders have automakers pointing customers toward the pump that dispenses premium-grade gasoline. That's a setback for drivers who hoped their new car's better mileage rating would mean savings with each fill-up. It's also a reminder that the label of premium, meant to signal the gasoline's octane rating — its ability to forestall the destructive effects of erratic combustion — also applies to the price. According to the Energy Department, premium averages 30 cents a gallon more than regular-grade gas, or $4.50 for each 15-gallon fill-up.

Why Toyota and GM Are Pushing Fuel-Cell Cars to Market

Falling costs are making fuel-cell vehicles look like a plausible alternative to conventional cars.

[MIT Tech Review, July 5] Hydrogen-powered vehicles have been out of the spotlight for years, but they're about to make a surprising comeback. Toyota says it will unveil a hydrogen fuel-cell-powered sedan later this year that will go on sale in 2015; several other automakers, meanwhile, have announced partnerships to commercialize the technology (see "Ford, Daimler, and Nissan Commit to Fuel Cells"), including GM and Honda, which announced such a collaboration this week. While many challenges remain for hydrogen vehicles, in recent years researchers have made big improvements in the oft-maligned technology, including greatly lowering its cost. As a result, fuel-cell vehicles look poised to play a significant role in meeting ambitious vehicle emissions regulations, particularly in places such as California. "GM, Toyota, and a couple of other automakers have done a lot of great work. Fuel cells are getting close to being viable, closer than most people might think," says Brett Smith, co-director for manufacturing, engineering, and technology at the Center for Automotive Research, a nonprofit in Ann Arbor, Michigan. Fuel-cell vehicles were once the darling of the Bush administration—President Bush called for $1.2 billion in funding for the technology in his 2003 State of the Union address. They emit only water vapor and could be as convenient as conventional cars, since they can be refueled in the time it takes to fill a gas tank and have a similar driving range. But fuel-cell vehicles proved extremely expensive, and would require a massive investment in hydrogen filling stations to be practical. There have also been questions about just how environmentally friendly hydrogen fuel-cell vehicles actually are: while the cars themselves don't emit carbon dioxide, hydrogen is produced from natural gas, a fossil fuel, in a process that releases large amounts of carbon dioxide. Hydrogen can also be made using solar and wind power, but that process is inefficient and expensive.

LEGISLATION AND REGULATION

BLM Advances Major Wyo.-to-Nev. Project As Obama Admin Pushes Renewable Energy

[E&E Publishing, July 8]The Bureau of Land Management today released the draft environmental review of a Wyoming-to-Nevada transmission line project that would allow wind-generated electricity in Wyoming to power homes as far away as California and could play a major role in meeting aggressive renewable energy goals outlined last week in President Obama's climate change strategy. The multivolume draft environmental impact statement for the 725-mile-long TransWest Express transmission line marks a major milestone for a project that's been under federal review for years. TransWest Express is one of seven pilot projects the Obama administration has targeted to "quickly advance" through the federal permitting process. The TransWest Express line would carry as much as 3,000 megawatts of electricity -- including wind-generated power from planned wind farms in Wyoming -- from a substation in Sinclair, Wyo., in the south-central part of the state, across portions of Colorado and Utah to a substation in southern Nevada, about 25 miles south of Las Vegas. The power line, once placed into service, would have the capacity to transmit enough electricity to power 1.8 million homes, according to BLM. The draft EIS, which was published in today's *Federal Register*, is now open for a 90-day public comment period running through Sept. 30. BLM says it will hold 13 public hearings beginning next month in all four states to gather feedback on the draft EIS.

DOE Rolls Out Fossil Fuel Loan Guarantees

[The New Fuelist, July 2] The Energy Department announced Tuesday it will soon take applications for up to $8 billion in federal loan guarantees for projects and developing technologies that reduce carbon emissions from extracting and burning fossil fuels. The draft request related Tuesday for fossil fuel technologies and projects that reduce greenhouse emissions is open for comment until September and is slated for finalization this fall. The move is part of the climate agenda President Obama revealed last week. Energy Secretary Ernest Moniz has been busy **promoting the loan guarantees** as a rebuttal to attacks from industry and mostly GOP lawmakers that the president's agenda amounts to a "war on coal." "The issue is to prepare for the future, a future in which coal is in fact

part of the mix," Moniz said during a Tuesday media call. "We're open for business for new ideas to come in," he added. The coal industry says the technology electric utilities need to stay under forthcoming greenhouse gas regulations for existing power plants is too expensive. Industry contends the loan guarantees are merely window dressing for a cloudy future.

Industry Panning Obama's Climate Change Push

[Associated Press, July 4] President Barack Obama's push to fight global warming has triggered condemnation from the coal industry across the industrial Midwest, where state and local economies depend on the health of an energy sector facing strict new pollution limits. But such concerns stretch even to New England, an environmentally focused region that long has felt the effects of drifting emissions from Rust Belt states. Just ask Gary Long, the president of the Public Service Co. of New Hampshire, the state's largest electric company. Long says the president's plan to impose limits on carbon dioxide emissions suddenly raises questions about the fate of the state's two coal-fired power plants, electricity rates for millions of customers and the ability to find new energy sources. And he also notes that New England has already invested billions of dollars in cleaner energy, agreed to cap its own carbon pollution and crafted plans to import Canadian hydroelectric power. "New Hampshire's always been ahead of the curve," he says. "Does no good deed go unpunished?" Long raised those concerns in the days after Obama launched a major second-term drive to combat climate change, bypassing Congress by putting limits for the first time on carbon pollution from new and existing power plants. At the core of his plan are controls on power plants that emit carbon dioxide _ heat-trapping gases blamed for global warming. Obama said the changes would reduce domestic carbon dioxide emissions by 17 percent between 2005 and 2020 and "put an end to the limitless dumping of carbon pollution." The program also is to boost renewable energy production on federal lands, increase efficiency standards and prepare communities to deal with higher temperatures. While the specific impact of Obama's plans varies from region to region, energy industry officials across the nation warn of likely plant closures and electricity rate spikes, illustrating the practical and political challenges Obama faces while balancing the nation's tepid economic recovery with an issue he says has dire implications for the planet's future. Republican leaders, many still skeptical of the existence of man-made climate change, have seized on the potential short-term economic impact of what some call the president's "war on coal" to criticize him and fellow Democrats.

Keystone XL Foes Turn Focus to Local Government

[Associated Press, July 2] Lincoln, NE – Frustrated with state and federal officials, opponents of the Keystone XL pipeline are turning to low-level county commissions and zoning boards in a new attempt to slow a project that has become a focal point of national battle over climate change. Landowners and other opponents of the pipeline, which could carry 830,000 barrels of oil per day from Canadian tar sands to refineries on the Texas Gulf coast, are asking county commissions along the route to pass resolutions formally opposing the project to show the federal government there is local opposition. They're also pushing for local zoning regulations — no matter how small — that could make it harder for the project to proceed.

US Bars New Mining Claims in Solar Zones

[Associated Press, July 6] WASHINGTON - Federal officials have taken another step toward establishing 17 new "solar energy zones" on public lands in the West by barring new mining claims that could impede renewable energy development on the sites. The Interior Department said Friday it has withdrawn nearly 304,000 acres of public lands in Arizona, California, Colorado, Nevada, New Mexico and Utah from new mining claims. Arizona has two zones, one east of Quartzsite and the other in La Paz County near the California border. To streamline solar development, the new zones are located near existing transmission lines and were chosen because they had fewer environmental and cultural issues that would require years of study and mitigation.

White House Has Coal Country on the Defensive

[Associated Press, July 1] Colstrip, Mont. — After several years of taking a beating from the poor economy, new pollution rules and a flood of cheap natural gas, the coal industry was on the rebound this year as mining projects moved forward in the Western U.S. and demand for the fuel began to rise, especially in Asia. But almost overnight, coal is back on the defensive, scrambling to stave off a dark future amid President Barack Obama's renewed push to rein in climate change. The proposal, with its emphasis on cuts in carbon dioxide emissions from new and existing power plants, would put facilities like the 2,100 megawatt Colstrip electricity plant in eastern Montana in regulators' cross hairs. That has profound spin-off implications for the massive strip mines that dot the surrounding arid landscape of the Powder River Basin and provide the bulk of the nation's coal. Montana's sole member of the U.S. House of Representatives bluntly declared that the administration had decided to "pick winners and losers" in the energy sector with its plan. "He wants to move toward shutting down the coal industry," Republican Rep. Steve Daines said of the president. Energy Secretary Ernest Moniz and representatives of the Environmental Protection Agency rejected claims that the administration's plan would exclude coal. They pointed to billions of dollars being

spent by the government on technologies to decrease emissions by capturing and storing carbon dioxide from coal plants. Yet widespread application of those technologies is years away, and Obama made clear in announcing his proposal that he intends to halt the "limitless dumping of carbon pollution" from power plants. He directed the Environmental Protection Agency to craft rules to make that happen.

WESTERN POWER

Apple Plans Nevada Solar Farm in Clean Energy Push for Data Centers

[Reuters, July 1] Apple Inc said it plans to build a new solar farm with NV Energy Inc for power supply to its new data center in Reno, Nevada, a major step towards its goal of having its data centers run on renewable energy. Apple and other technology companies such as Amazon.com Inc and Microsoft Corp, that build and run computer server farms have come under criticism for their high consumption of electricity and other resources. These data centers cater to an explosion in Internet traffic, streaming content through mobile devices and hosting of services to corporations. The new solar farm will provide power to Sierra Pacific Power Co's electric grid that serves Apple's data center and when completed will generate about hours 43.5 million kilowatt of clean energy a year, Apple said in a statement.

First Solar Breaks Ground on New Mexico Plant

[Phoenix Business Journal, July 1] On Monday, construction started on New Mexico's largest solar plant on state trust land. New Mexico Land Commissioner Ray Powell announced that First Solar (NASDAQ: FSLR) broke ground at the Macho Springs solar project on 500 acres near Deming. The project could generate as much as $40 million for state trust land over the life of the lease. The plant should be completed by May 2014.

Mandalay Bay Announces Plan To Build Country's 2nd Largest Rooftop Solar Array

[Las Vegas Sun, July 2] MGM Resorts International announced today it intends to blanket the rooftop of one of its Strip properties with tens of thousands of solar panels. The solar array atop Mandalay Bay Resort's convention center would be the country's second largest rooftop solar project if completed on schedule in early 2014, said representatives from MGM at a press conference at Mandalay Bay on Tuesday afternoon. The 6.2 megawatt installation originates from a partnership with independent power producer NRG Energy. A solar array of that size could provide power to about 1,000 homes. Executives at Mandalay Bay expect that it will provide up to 20 percent of the resort's energy needs when the sun is shining its brightest.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- **NEW! Southern and Central Arizona Aerospace & Defense Region - 2013 Energy Reduction Challenge Grant Competition**

- Angel Investment Tax Credit Program - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here.

Income Tax Credit Provisions

An investor seeking an income tax credit must document to the ACA the investment was made in either a qualified rural or bioscience company or any other qualified small business. For a qualified bioscience or rural company, the tax credit may total up to 35% of the investment amount over three years; for any other qualified business, the tax credit may total up to 30% over three years. If the tax credits exceed the investor's income tax liability, any unused tax credit amount may be carried forward for up to three taxable years as long as the investor timely claims the credits with Revenue.

The ACA may authorize up to $20 million in tax credits to qualified investors beginning July 1, 2006 through June 30, 2016. The tax credits will be authorized on a first come, first served basis, which is established by the date and time the investor files an application with the ACA. Download the Angel Tax Credit Allocation Table Angel Tax Credit Allocation Table to view the remaining amount of tax credits available. For more detailed information please see below or direct questions to the Program Manager.

Arizona Innovation Accelerator Fund - The Arizona Innovation Accelerator Fund Program is an $18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona.

Arizona Innovation Challenge - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award $1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from $100,000 to $250,000).

AZ Fast Grant - Technology Commercialization Assistance - Next round of grants opening in mid November. This competitive grant enables Arizona-based technology companies to initiate the commercialization process. The grant will pay up to $7,500 to provide one or more of the following professional consulting services:

- An expert review of the technology under development to determine if it already exists, is a good candidate for intellectual property protection and is likely to find an attractive market.
- A commercialization feasibility study to identify showstoppers to commercialization before resources are spent commercializing a technology that is unlikely to succeed.
- Other commercialization assistance such as training or preparation for the submission of a federal SBIR/STTR grant application or another acceptable means of technology commercialization.

AZ Step Grant - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets.

Commercial/Industrial Solar Energy Tax Credit Program - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. For more detailed information please see below or direct questions to the Program Manager.

Healthy Forest - Harvesters, initial processors and transporters of small diameter timber, may receive: Transaction Privilege Tax Exemptions, Use Tax Exemption and New Job Income Tax Credits.

Job Training Program offers job specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round

Renewable Energy Tax Incentive Program offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round

Research and Development Tax Credit is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue.

Quality Jobs Tax Credit Program - Beginning July 1, 2011, this new program provides Arizona income tax credits for companies creating new jobs and investing in Arizona. The credit is valued at up to $9,000 over a 3-year period per each new employee and offers a 5-year carry forward provision for any unused tax credits. Eligibility qualifications are different for rural and metro areas.

Bonds Administered by the Arizona Commerce Authority.

Federal Programs

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Pollution Control Tax Credit - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.

- Renewable Energy Production Tax Credit - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Sales Tax Exemption for Machinery and Equipment - Exemptions are available for:
  1. Machinery or equipment used directly in manufacturing, see ARS 42-5159(B)(1).
  2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see ARS 42-5159(B)(4).
  3. Machinery or equipment used in research and development, see ARS 42-5159(B)(14).

  Questions can be directed to Christie Comanita (602-716-6791).

- Solar Liquid Fuel Tax Credit - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

- Database of State Incentives for Renewables and Efficiency (DSIRE)
  - Arizona Incentives/Policies
  - Federal Incentives/Policies
  - Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- FY2013 Economic Development Assistance Programs – Response due quarterly; September 13, 2013
- Rural Energy for America Program for FY2013 - Response due July 15, 2013
- 2014 National Urban and Community Forestry Grant Program - Response due July 15, 2013
- Solar, Heliospheric, and INterplanetary Environment – Response due August 21, 2013
- Clean Energy Manufacturing Innovation Institute – Response due August 29, 2013
- Water Sustainability and Climate - Responses due September 10,2013
- Concentrating Solar Power: Efficiently Leveraging Equilibrium Mechanisms for Engineering New Thermochemical Storage (CSP: ELEMENTS) - Response due August 21, 2013
- Clean Energy Manufacturing Innovation Institute- Response due August, 29, 2013
- Bio-refinery Assistance Program – Response due October 31, 2013
- Energy, Power, and Adaptive Systems – Response due November 1, 2013
- Electronics, Photonics, and magnetic Devices - Response due November 1, 2013
- SunShot Initiative - Responses due November 20, 2014
- Solid Waste Management Grant - Response due December 31, 2013
- Environmental Sustainability - Response due February 20, 2014
- Energy for Sustainability - Response due February 20, 2014
- Environmental Health and Safety of Nanotechnology - Response due February 20, 2014
- Particulate and Multiphase Processes- Response due February 20, 2014
- Thermal Transport Processes - Response due February 20, 2014
- SunShot "Race to the Roof" Initiative - Registration due October 31,2014

- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Renewable Energy RFPs - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines

ENERGY-RELATED EVENTS

- Waste Conversion Technology Conference & Trade Show,
  September 15-17, 2013 San Diego, CA

- NASEO 2013 Annual Meeting
  September 15-18 Denver, CO

- 2013 SolarPACES
  September 17-20, 2013 Las Vegas, NV

- GEA Geothermal Energy Expo 2013
  September 29-October 2 Las Vegas, NV

- Solar Decathlon 2013
  Oct. 3-13, 2013 Irvine, CA

- IGSHPA Conference & Expo
  October 9-10, 2013 Las Vegas, NV

- AWEA Wind Energy Fall Symposium
  November 6-8 Colorado Springs, CO

- GreenBuild International Conference and Expo
  November 20-22 Philadelphia, PA

- Ecobuild America 2013
  December 9-13 Washington, D.C.

- Green Biz Forum 2014
  February 18-20, 2014 Phoenix, AZ

- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ